

SUPPORT FOR THE AMENDMENT

This Amendment amends Claim 10; and adds new Claims 11-17. Support for the amendments is found in the specification and claims as originally filed. In particular, support for Claims 11-17 is found in Claims 1 and 9. No new matter would be introduced by entry of these amendments.

Upon entry of these amendments, Claims 1-7 and 9-17 will be pending in this application. Claims 1 and 9 are independent.

REQUEST FOR RECONSIDERATION

Applicants respectfully request entry of the foregoing and reexamination and reconsideration of the application, as amended, in light of the remarks that follow.

Applicants thank the Examiner for the courtesies extended to their representative during the personal interview on February 22, 2007.

As discussed at the personal interview, when steel sheets are spot-welded to each other, it is important that the electrical resistance of the resin coat not be too high in order to ensure satisfactory weldability. In addition, it is important for resin-coated hot dip galvanized steel sheet to have satisfactory corrosion resistance. However, conventional resin-coated hot dip galvanized steel sheets do not exhibit a satisfactory combination of weldability and corrosion resistance. Specification at page 3 line 25 to page 4, line 11.

The present invention provides a resin-coated hot dip galvanized steel sheet superior in weldability and corrosion resistance. The present inventors found that by adjusting the composition of the resin coat appropriately the weldability is improved to a remarkable extent while maintaining good basic characteristics, such as corrosion resistance, electric conductivity, film adherence and machinability. Specification at page 8, lines 9-13; page 7, lines 15-19.

The coating material used in the present invention contains **10 to less than 55 mass % of silica particles** in terms of solids content. The silica particles are effective in imparting excellent corrosion resistance and coatability to the resulting film and suppressing the occurrence of film scratching and blackening phenomena at the time of machining. For allowing these effects to be exhibited, it is necessary that the content of silica particles be 10 mass% or more in terms of solids content. However, if the content of silica particles is 55 mass % or more, the silica particles will be deposited on the welding electrode tip, causing sparking, whereby the electrode tip is damaged and the service life thereof becomes extremely short. Specification at page 13, line 18 to page 14, line 4 (emphasis added).

Claims 1-6 and 9 are rejected under 35 U.S.C. § 103(a) over U.S. Patent No. 6,040,054 ("Odashima") in view of Applicants' admissions at bottom of page 1 of the specification ("APA"); JP 11310757A ("Nippon"); and JP 05286072A ("Mitsui").

Claim 7 is rejected under 35 U.S.C. § 103(a) over Odashima in view of APA; Nippon and Mitsui, and further in view of U.S. Patent No. 5,950,468 ("Shimizu").

Claim 10 is rejected under 35 U.S.C. § 103(a) over Odashima in view of APA; Nippon and Mitsui, and further in view of U.S. Patent No. 6,015,855 ("Dalton").

Odashima discloses a chromium-free composition for treating metal sheet, where the composition can comprise (a) a hydroxyl group-containing organic resin, (b) a phosphoric acid and (c) at least one of ions and compounds of at least one metal selected from the group consisting of Mg, Zn, Ca, Fe and Al; and (d) at least one of colloids (sol) or powders of SiO₂. Odashima at Abstract. Odashima discloses:

At least one of colloids (sols) or powders of SiO₂, Fe₂O₃, Fe₃O₄, MgO, ZrO₂, SnO₂, Al₂O₃ and Sb₂O₅ is preferably used in an amount of **about 3 to about 300 parts by weight, more preferably about 3 to about 30 parts by weight, per 100 parts by weight of the hydroxyl group-containing organic resin (a)**. The amount of more than 300 parts by weight tends to decrease the overcoat adhesion. Odashima at column 11, lines 34-40 (emphasis added).

However, Odashima and the secondary references fail to suggest the limitation of independent Claims 1 and 9 of a resin film, and of an aqueous resin coating material,

respectively, comprising "10 to less than 55 mass% of silica particles in terms of solids content". Thus, the rejections under 35 U.S.C. § 103(a) should be withdrawn.

Any *prima facie* case of obviousness based on the cited prior art is rebutted by the significant improvement in the combination of weldability and corrosion resistance that is achieved by the resin-coated hot dipped galvanized steel sheet of the present invention with "10 to less than 55 mass % of silica particles in terms of solids content". This is demonstrated in the specification at Table 2, reproduced below.

Table 2

No.	Content (mass%) of the silica particles	Corrosion Resistance	Weldability (%)	Expulsion and surface flash
8	10	○	100	○
9	20	○	95	○
10	35	○	90	○
11	50	○	80	○
12	54	○	75	○
13	5	×	100	○
14	9	△	100	○
15	56	○	10	△
16	65	○	5	×

In Table 2, Example Nos. 8-12 show that a content of silica particles of 10 to less than 55 mass% provides significant improvement in the combination of weldability and corrosion resistance in comparison to Comparative Example Nos. 13-14, which include less than 10 mass% of silica particles, and Comparative Example Nos. 15-16, which include more than 55 mass% of silica particles.

The cited prior art is silent about weldability and about the improved combination of weldability and corrosion resistance that is achieved by the present invention with "10 to less than 55 mass% of silica particles in terms of solids content".

Thus, any *prima facie* case of obviousness based on the cited prior art is rebutted. For this additional reason, the rejections under 35 U.S.C. § 103(a) should be withdrawn.

New Claim 13 is further patentably distinguishable over the cited prior art. The Claim 13 limitation "consists of" excludes the about 2 to about 60 parts by weight of phosphoric acid per 100 parts by weight of hydroxyl group-containing resin (a) required by Odashima. Odashima at abstract; column 9, lines 34-41.

Applicants respectfully request that the Examiner acknowledge consideration of (i) the references cited in the Information Disclosure Statement filed April 24, 2006; and (ii) the AP reference cited in the Information Disclosure Statement filed November 3, 2003, by initialing the associated Forms PTO-1449. For the Examiner's convenience, a copy of each of the Forms PTO-1449 and a copy of each of the date-stamped filing receipts are attached.

In view of the foregoing amendments and remarks, Applicants respectfully submit that the application is in condition for allowance. Applicants respectfully request favorable consideration and prompt allowance of the application.

Should the Examiner believe that anything further is necessary in order to place the application in even better condition for allowance, the Examiner is invited to contact Applicants' undersigned attorney at the telephone number listed below.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.
Norman F. Oblon

Corwin Paul Umbach

Corwin P. Umbach, Ph.D.
Registration No. 40,211

Attached:

Form PTO-1449 and date-stamped filing receipt from IDS filed April 24, 2006
Form PTO-1449 and date-stamped filing receipt from IDS filed November 3, 2003

Customer Number

22850

Tel: (703) 413-3000
Fax: (703) 413 -2220
(OSMMN 03/06)